Job Satisfaction of People With Intellectual Disability: Associations With Job Characteristics and Personality

Alma Akkerman, Sabina Kef, and Herman P. Meininger

Abstract

To obtain an understanding of factors associated with job satisfaction of people with intellectual disability (ID), this study investigates the associations of job satisfaction with job characteristics (i.e., job demands, job resources) and personality, using the job demands-resources model. Data were gathered from 117 people and their employment support workers, using structured questionnaires adapted from well-established instruments. Job resources and age were positively associated with job satisfaction. Job demands and personality showed no significant direct associations with job satisfaction. Moderation analyses showed that for people with ID with high conscientiousness, enhanced job demands were associated with reduced job satisfaction, which was not the case for those with low conscientiousness. This study emphasizes the importance of job design.

Key Words: intellectual disability; job satisfaction; job characteristics; personality

Work is a significant part of life for many people with intellectual disability (ID). Paying attention to their job satisfaction is essential because job satisfaction is considered an indicator for subjective quality of life within the work domain (Cummins, 2005; Spector, 1997). Job satisfaction may therefore be relevant for both individual functioning and well-being, as well as organizational effectiveness. Research among people with and without disabilities shows associations between job satisfaction and life satisfaction (e.g., Judge & Klinger, 2008; Schalock, Bonham, & Marchand, 2000), as well as between job satisfaction and various workplace behaviors, such as job performance, and job retention (Fornes, Rocco, & Rosenberg, 2008; Fritzsche & Parrish, 2005; Judge & Klinger, 2008; Spector, 1997).

Considering the significance of the topic, in mainstream industrial and organizational psychology an extensive amount of research has been devoted to finding the possible antecedents of job satisfaction (Judge & Church, 2000; Spector, 1997). Results point to the importance of taking an integrative approach to job satisfaction that accounts for both situational as well as personal characteristics, as well as the interaction between the two (e.g., Brief, 1998; Judge, Bono, & Locke, 2000; Judge & Kammeyer-Mueller, 2012; Lent & Brown, 2008). For people with ID however, the concept of job satisfaction remains relatively underinvestigated. Knowledge on the factors associated with their job satisfaction is limited and incomplete, and particularly an integrative approach is lacking (Akkerman, Janssen, Kef, & Meininger, 2016; McAfee & McNaughton, 1997). In order to understand how people with ID can be supported at work, and to select and design work environments that may enhance their job satisfaction, a more comprehensive understanding of their job satisfaction and the various factors that may be associated with it is needed. This study will contribute to this understanding by investigating how job characteristics and personality traits are related to job satisfaction of people with ID, using the job demands-resources model (JD-R; Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) as a theoretical framework.
Theoretical Background

Job characteristics. In general organizational literature there is ample support for the proposition that job characteristics are important antecedents of job satisfaction (Fritzche & Parrish, 2005; Frye, 1996; Judge & Church, 2000; Judge & Klinger, 2008). When people with ID are asked about their job satisfaction, the work itself and various characteristics of the job emerge as important factors (Akkerman, Janssen, Kef, & Meiningher, 2014; Lysaght, Ouellette-Kuntz, & Morrison, 2009; Test, Carver, Ewers, Haddad, & Person, 2000; Test, Hinson, Solow, & Keul, 1993). Nevertheless, thus far little is known on the strength of the associations between job characteristics and job satisfaction of people with ID, or on which job characteristics may be most important in relation to their job satisfaction (Akkerman et al., 2016). To enhance our understanding on the associations between job characteristics and job satisfaction of people with ID, we will rely on the JD-R model (Bakker & Demerouti, 2007; Demerouti et al. 2001). The JD-R model is a theoretical model, that assumes employee well-being may be produced as a consequence of two general categories of job characteristics: job demands and job resources. Job demands refer to “those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs” (Bakker & Demerouti, 2007, p. 312). Job resources refer to “those physical, psychological, social or organizational aspects of the job that are either/or (a) functional in achieving work goals (b) reduce job demands and the associated physical and psychological costs, (c) stimulate personal growth, learning and development” (Bakker & Demerouti, 2007, p. 312). Within the JD-R model, the choice of specific job demands and job resources to be included in a study is dependent upon the study context. The JD-R model has been proven useful in providing insight in the relationship between job characteristics and various aspects of employee well-being, including job satisfaction (e.g., Bakker, Demerouti, De Boer, & Schaufeli, 2003; Bakker, Demerouti, & Verbeke, 2004; Bos, Donders, Bouwman-Brouwer, & Van der Gulden, 2009; De Lange, De Witte, & Notelaers, 2008). Findings from employees without ID indicate that job resources are generally positively associated with job satisfaction, whereas job demands are either negatively or not associated with job satisfaction (e.g., Bos et al., 2009; Nielsen, Mearns, Mathiesen, & Eid, 2011). A study by Flores, Jenaro, Orgaz, and Martin (2011) among people with ID found a positive association between job resources and quality of working life, a concept closely related to job satisfaction, and a negative association between job demands and quality of working life. Their study pointed to the applicability of the JD-R model for intellectual disability research. More research is needed however to further strengthen the findings with respect to job satisfaction of people with ID.

Personality traits. Job characteristics are not the only determinants of job satisfaction. Current theoretical models recognize personal factors are relevant for job satisfaction as well, and there is particularly strong evidence for the assumption that personality traits relate to job satisfaction (Judge, Heller, & Mount, 2002; Judge & Larsen, 2001). In order to retain a more comprehensive understanding of job satisfaction of people with ID, it would therefore seem useful to extend the JD-R model by including personality traits. In intellectual disability research personality traits have received limited attention, even though it has been noted that personality may affect the well-being and successful community participation of people with ID (e.g., Boyd, 2013; Lidher, Martin, Jayaprakash, & Roy, 2005). Only a few instruments exist for assessing personality traits in people with ID, and these are generally not based on broad theories of personality developed for use within the general population, such as the five factor model (Boyd, 2013). In general personality research, the five factor model (FFM; McCrae & Costa, 2003) is predominant. This model is supported by a considerable body of research, and has also shown to be applicable to the domain of employment. A meta analysis by Judge et al. (2002) showed correlations of job satisfaction of people without ID with three traits from the five factor model of personality (McCrae & Costa, 2003): neuroticism, extraversion, and conscientiousness. Therewith, we will explore the associations of neuroticism, extraversion, and conscientiousness with job satisfaction of people with ID. Neuroticism (or emotional instability) refers to the tendency to experience negative emotions and is expected to be negatively associated to job satisfaction. Individuals scoring high on neuroticism are prone to anxiety, tend to
be fearful in novel situations, and are more vulnerable to aversive stimuli and the effects of stress. They are susceptible to feelings of dependence and helplessness and tend to put themselves more often in situations that foster negative affect. Extraverted individuals on the other hand are characterized by sociability, talkativeness, assertiveness, and excitability and are predisposed to experience positive emotions, hence are also expected to have higher levels of job satisfaction. Conscientiousness is assumed to influence job satisfaction because it represents a tendency to act dutifully and aim for achievement, enhancing possibilities of obtaining satisfying work rewards (e.g., promotions, recognition, feelings of accomplishment).

In addition to the main effects of personality traits on job satisfaction, personality traits may act as a moderator on the relationship between job characteristics and job satisfaction, as the effects of diminishing job demands or enhancing job resources could be different depending on a person’s traits (Bakker et al., 2010; Boudrias et al., 2011; Judge, Bono, & Locke, 2000; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). The direct and indirect effects of personality traits on job satisfaction are not mutually exclusive; partial forms of both effects could be found.

This Study
The aim of this study is to extend the knowledge on job satisfaction of people with ID in order to clarify differences in job satisfaction levels between individuals and employment settings, and to highlight possible points of intervention. Using the JD-R model this study investigates (a) the role of job demands (psychological demands, physical demands, emotional demands) and (b) job resources (decision authority, opportunities for skill utilization, meaningfulness, social support from co-workers, social support from mentor) in relation to job satisfaction. Based on results of previous research (Akkerman et al., 2014, 2016) in this study three job demands (psychological demands, physical demands, emotional demands), and five job resources (decision authority, opportunities for skill utilization, meaningfulness, social support from co-workers, social support from mentor) were selected. In addition, the study explores the role of personality traits (neuroticism, extraversion, conscientiousness) in relation to job satisfaction and the potential moderating pathways amonuq job characteristics (i.e., job demands, job resources), personality traits, and job satisfaction (see Figure 1).

To enhance understanding, and considering the specific situation and characteristics of people with ID, several characteristics that may be expected to impact job satisfaction were added as control variables in the model: gender, age, IQ-level, and the distinction between integrated and sheltered employment, which was found to be associated with job satisfaction of people with intellectual disability in previous research (Akkerman et al., 2016).

In accordance with the available literature, we expect that (1) job demands, job resources, and personality traits are significant predictors of job satisfaction. Specifically, lower job demands, higher job resources, lower neuroticism, higher extraversion, and higher conscientiousness will predict higher job satisfaction, and (2) personality traits will moderate the relationship between job characteristics and job satisfaction.

Method

Procedure
Letters seeking participation in the research were sent to 428 people drawn from the register of a Dutch care organization. This organization provides support to people with ID in sheltered employment, by means of work activities in several day centers, and integrated employment. Every fifth client from the organization’s alphabetically ordered register was approached. Clients qualified for the study met the following inclusion criteria: (1) between 18 and 67 years old; (2) intellectual disability as a primary diagnosis; (3) moderate or mild levels of impairment, or borderline intellectual functioning; (4) sufficient communication ability in Dutch, with at least some verbal expression (judged by a mentor); (5) at least two months in the present employment setting; and (6) informed consent by client and, if appropriate, legal representatives. Exclusion criteria were (1) severe visual or hearing deficits or (2) no current work activities (staying at home or having recreational day care). Letters were accompanied by brochures describing the research project in simple language, and included information about confidentiality and anonymity. Participants were approached through their mentors (i.e., main support/contact person) who would screen for eligibility based on the in- and exclusion criteria, and clarified the information if necessary.
A reminder was send when needed. The study was executed in compliance with a research design that had been approved by the client advisory board of the service organization (D-13 171).

Of the 428 people approached, 145 were willing to participate, 205 indicated they did not want to participate, and 78 did not respond. Of those willing to participate, 28 dropped out for reasons of no show, no permission from their legal representative, or being unfit for participation (e.g., not meeting inclusion criteria, participation was experienced as too stressful), resulting in a total of 117 participants in this study. Interviews typically took place at the employment setting, or, when this was not possible, at their place of residence. The actual interviews were preceded by a pilot interview, to eliminate errors in the questionnaire and scoresheet.

Respondents were individually interviewed about their perception of job demands and job resources and job satisfaction by trained interviewers. All interviews were preceded by three test-items, to check for understanding and provide a means for the respondent to be set at ease and for practice. Several measures were taken in order to increase comprehension, as recommended for interviewing people with ID (Finlay & Lyons, 2001). Questions were phrased with low frequent use of reverse wording, and used easy language with no ambiguous or complex phrasings. Questions were read orally to each respondent, and also presented by means of a written card. All answers were on the same 5-point scale (totally agree – totally disagree), and were displayed on five separate cards, in different shades of green or red. Cards with the answers were laid out on the table and the respondent was asked to place the question card below the appropriate answer card. Respondents would be asked to elaborate on their answers, to give the interviewer additional information on their views and an indication on how well the question was understood. Whenever necessary, questions could be rephrased, according to a prescribed manner, set out in a protocol. When a scoreable answer was not possible, the questionnaire allowed for registrations of missing or uncodeable answers. As this study was part of a larger research project, additional interview questions which did not relate to job demands and job
resources were also asked. The average length of the interviews was 75 min.

Data on personality were obtained through the job coach/support staff at work, because of the complexity of the questions and to reduce the number of questions for the participants with ID. The use of observer ratings for personality traits is not uncommon in general personality research, and literature suggests that observer ratings of personality predict behavior as well as, or even better than self-ratings, in a variety of settings, including employment settings (e.g., Connelly & Ones, 2010; Mount, Barrick, & Strauss, 1994; Oh, Wang, & Mount, 2011). Good experiences have also been reported in research with people with ID (Boyd, 2013; Overbeek, Geluwie, De Schipper, & Schuengel, 2009). Raters were required to be well acquainted with the client and had been working with him for at least two months. Data was obtained by means of a questionnaire, that could be filled out on paper or online, in a maximum of 15 min.

Participants
Of the 117 participants, 57 were male (49%) and 60 female (51%). The mean age of the participants was 37 years. Twenty-one percent of the participants had a moderate levels of impairment (IQ range 70-85), 66% had a mild levels of impairment (IQ range 50-70), 13% borderline intellectual functioning (IQ range 70-85). Most of the participants (73%) worked in sheltered employment, which can be described as “employment in a facility where most people have disabilities, with ongoing work-related supports and supervision” (Metzel, Boeltzig, Butterworth, Sulewski, & Gilmore, 2007, p. 151). A total of 27 day centres was included in the study. The day centres varied in the amount of support, degree of community integration and activities provided (e.g., manufacturing, gardening, hospitality, painting, shop assistance, animal care, cleaning). Twenty-seven percent of the participants worked in integrated employment, “in the general labor market where the proportion of workers with disabilities does not exceed the natural proportions in the community” (Migliore, Mank, Grossi, & Rogan, 2007, p. 7), where they were working in various jobs (e.g., cleaning, shop assistance, hospitality, gardening, manufacturing); most were in individual placements (87%), but some were in group placements (13%). All participants had been declared unfit for gainful employment according to Dutch legislation. As such they were all reliant on government benefits for their income, and their jobs were unpaid.

Measures
Job satisfaction was assessed using a 5-item job satisfaction scale, developed by Judge, Locke, Durham and Kluger (1998), which was based on the Brayfield and Rothe (1951) job satisfaction scale, and has proven to be a reliable measure in other studies (e.g., Judge et al., 2000). The scale was chosen as it is a self-report measure that provides an overall, global measure of job satisfaction, contains a limited number of items, and uses simple words and phrases. The scale comprises both positively and negatively worded items (e.g., “I find real enjoyment in my work,” “I consider my job rather unpleasant”). Cronbach’s α of the scale was 0.77 in this study.

The items measuring job characteristics (i.e., job demands, job resources) were adapted from well-established Dutch job content questionnaires, using self-report. Items were modified when necessary, for needs of simplification, and so that all items were formulated as statements in the affirmative form. When necessary, scales were supplemented with new items. Job demands were measured using three subscales (i.e., psychological demands, physical demands, emotional demands). Items for psychological demands (5 items, e.g., “My job requires working very hard”; Cronbach’s α = 0.60) were adapted from a Dutch version of the Job Content Questionnaire (JCQ; Karasek et al., 1998) and the questionnaire of Van Veldhoven and Meijman (1994). Items measured both workload and cognitive demands. Physical demands (3 items, e.g., “In my job I am required to move or lift very heavy loads”; Cronbach’s α = 0.58) were adapted from Van der Doef and Maes (1999). Emotional demands (3 items, e.g., “In my job I have to deal with difficult people”; Cronbach’s α = 0.60) were measured with a self-constructed scale, and refers to the emotional stress associated with unpleasant situations. Cronbach’s alpha for the overall job demands scale was 0.68. Job resources were measured using five subscales (i.e., decision authority, opportunities for skill utilization, meaningfulness, social support from co-workers, social support from mentor). Decision authority (5 items, e.g., “I can decide the order in which I do my work on my own”; Cronbach’s α = 0.66) was based on Van Veldhoven and Meijman (1994). Opportunities for skill utilization (3 items, e.g., “I get to do a variety of
different things on my job”; Cronbach’s $\alpha = 0.68$) were adapted from Van der Doef and Maes (1999). Meaningfulness was measured with a self-constructed scale (4 items, e.g., “The work I do is important”; Cronbach’s $\alpha = 0.68$), and refers to the enjoyment and pride of doing something ego-strengthening and worthwhile. For the subscale social support from coworkers (7 items, e.g., “If I have problems in my job I can ask my colleagues for help”; Cronbach’s $\alpha = 0.67$) five items measuring both social- and work-related aspects of interaction were selected from Van der Doef and Maes (1999), supplemented with two self-constructed items (e.g., “I can have fun with my colleagues”) based on previous research (Akkerman et al., 2014). Social support from mentor (7 items, e.g., “If I have problems in my job I can ask my mentor for help”; Cronbach’s $\alpha = 0.71$) was measured with a self-constructed scale, with items adapted from the subscale social support from coworkers and grounded in previous research (Akkerman et al., 2014). Items were selected measuring both social and support-related aspects of the relationship with the mentor. Cronbach’s alpha for the overall job resources scale was 0.78. All job characteristics were measured on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Responses were coded such that higher scores referred to higher job demands and more job resources. To obtain composite scores for the subscales an average of items was calculated.

Personality traits (neuroticism, extraversion, conscientiousness) were assessed using the Big Five Inventory-10 (BFI-10; Rammstedt & John, 2007), a 10-item short version of the Big Five Inventory (BFI; John, Donahue & Kentle, 1991). A short instrument was needed due to time constraints of the employment support workers who would fill in the questionnaire, and a long instrument was expected to yield higher nonresponse rates. Brief personality measures have been found suitable for use in research settings with time constraints, and the BFI-10 was found to have adequate levels of reliability and validity (Rammstedt & John, 2007). In this study internal consistency of the scales was low; Cronbach’s alpha was 0.51 for neuroticism, 0.35 for extraversion, and 0.43 for conscientiousness, which is however not uncommon for abbreviated measures, and can be explained by the fact that only two items were used per scale, with low content overlap for validity considerations (e.g., see also Gosling, Rentfrow, & Swann, 2003). It has been noted that Cronbach’s alpha tends to underestimateme reliability for short measures (Osburn, 2000; Yarkoni, 2010). Answers were scored on a 5-point scale, ranging from 1 (totally disagree) to 5 (totally agree), with higher scores indicating less neuroticism (i.e., more emotional stability), more extraversion, and more conscientiousness.

Data on the control variables employment type (which refers to the difference between integrated and sheltered employment), IQ-level, age, and gender was obtained from the client records of the participating organization. Data on IQ-level was determined by a behavioral scientist, based on diagnostic data (scores on IQ-tests and/or scales for adaptive functioning), combined with knowledge on past and present functioning. Three levels were discerned: people with intellectual disability with moderate levels of impairment, mild levels of impairment, and borderline intellectual functioning.

Data Analysis

The data were analysed using IBM SPSS statistics version 21. All variables were checked for outliers ($Z \geq 3.29$ or $\leq -3.29$), which were winsorized to the nearest non-outlier (Tabachnik & Fidell, 2007). This happened in three cases. Because the scales for job demands, job resources and job satisfaction returned adequate reliability scores, missing values were replaced by the mean for the scale. Participants with more than two missing values on a subscale were excluded from the analyses.

The first hypothesis of the study on the main effects of job characteristics and personality traits on job satisfaction was tested using multiple regression analysis. Job satisfaction scores were included as the dependent variable, job demands, job resources, neuroticism, extraversion, and conscientiousness as independent variables. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity, and after verifying the lack of multicollinearity among explanatory variables, by using the tolerance index and the VIF.

Evidence for the second hypothesis, pertaining to moderating effects was examined using hierarchical regression procedures, using standardized scores. The predictor variable was entered at first step, followed by the moderating variable as the second step. In the third step the interaction term for the predictor variable and the moderator variable was entered. Separate analyses were conducted for each of the three moderators (i.e., neuroticism, extraversion, conscientiousness).
Results

Descriptive Analyses

Table 1 presents mean scores and standard deviations on job demands, job resources, neuroticism, extraversion, conscientiousness and job satisfaction, for the overall sample. Descriptives are provided for the overall scales, as well as for the subscales of job resources and job demands, in order to gain deeper insight into the work situations and aid data interpretation.

The mean level of job satisfaction was 4.33 (SD = 0.78), indicating that the participants felt generally satisfied with their jobs. Contrary to expectations, there was no difference in job satisfaction level between participants in integrated and sheltered employment as determined by one-way ANOVA, $F(1,114) = 0.06, p = 0.805$. Analysis of variance indicated no significant differences between men and women, $F(1,114) = 0.55, p = 0.459$, and different IQ-levels, $F(2,112) = 1.782, p = 0.173$ with respect to job satisfaction. Therefore, employment type, gender and IQ-level were not included as control variables in subsequent analyses.

Table 1 also shows correlation coefficients for all variables. Higher scores on job satisfaction were significantly associated with older age ($r = 0.26, p = 0.006$) and with higher perceived job resources ($r = 0.42, p = 0.000$). As a consequence, age was included as a control variable in all analyses. Three subscales for job resources were significantly associated with higher job satisfaction: more meaningfulness ($r = 0.59, p = 0.000$), more social support from co-workers ($r = 0.34, p = 0.000$), and more social support from mentors ($r = 0.20, p = 0.033$). No significant association was found between job satisfaction and overall job demands, although one subscale for job demands was significantly associated with higher job satisfaction: lower emotional demands ($r = -0.26, p = 0.006$). No significant associations were found between job satisfaction and any of the personality traits (neuroticism, extraversion, conscientiousness).

Main Effects of Job Demands, Job Resources, and Personality Traits on Job Satisfaction (Hypothesis 1)

Table 2 presents the findings from a 3-step hierarchical regression analysis predicting job satisfaction from personality traits (i.e., neuroticism, extraversion, conscientiousness) and job characteristics (i.e., job demands, job resources). Age was included in the first block as a control variable. The first model shows that age explained about 6% of variance in job satisfaction, $F(1,108) = 6.98, p = 0.009$, and was a significant predictor of job satisfaction ($\beta = .25, p = 0.009$). In the second model, personality traits were entered and there was no significant change in $R^2$. The resulting model explained 9% of variance, and was significant, $F(4,105) = 2.56, p = 0.043$. In this model age was a significant predictor of job satisfaction ($\beta = .26, p = 0.007$), whereas neuroticism ($\beta = .14, p = 0.147$), extraversion ($\beta = .02, p = 0.820$), and conscientiousness ($\beta = .08, p = 0.376$) were not significant predictors of job satisfaction. Addition of job characteristics in the third model, leads to significant increase (17%) in explained variance. The resulting model explains 25% of variance, $F(6,103) = 5.85, p = 0.000$. Job resources were a significant predictor of enhanced job satisfaction ($\beta = .40, p = 0.000$), whereas job demands were not ($\beta = -0.11, p = 0.240$). When the job characteristics were included in the model, age still significantly predicted job satisfaction ($\beta = .26, p = 0.005$), whereas beta’s for personality traits remained unsignificant.

Moderating Effects (Hypothesis 2)

In hypothesis 2 potential moderating effects of neuroticism, extraversion, and conscientiousness on the relationship between job characteristics (i.e., job demands, job resources) and job satisfaction were examined. This resulted in a total of six separate hierarchical regression analyses (2 predictor variables $\times$ 3 moderator variables).

First, we performed three analyses, examining the moderating effects of neuroticism, extraversion, and conscientiousness on the relationship between job demands and job satisfaction. With respect to the moderating effect of neuroticism it was found that the overall model, including the interaction term for job demands $\times$ neuroticism, was significant, $R^2 = .09, F(4,105) = 2.71, p = 0.034$, yet the interaction term (job demands $\times$ neuroticism) was not ($\beta = 0.02, p = 0.848$). With respect to extraversion, the overall model, including the interaction term for job demands $\times$ extraversion was significant as well, $R^2 = .09, F(4,105) = 2.49, p = 0.048$, and again the interaction term (job demands $\times$ extraversion) was not ($\beta = -0.10, p = 0.296$) indicating that the relation between job demands and job satisfaction was not significantly moderated by neuroticism and extraversion. Conscientiousness on the other hand was a significant moderator of the relation between
Table 1

Means, Standard Deviations, and Correlations Between Control Variables, Predictors, and Outcome Variable

<table>
<thead>
<tr>
<th></th>
<th>M (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1. Gender</td>
<td>0.49 (0.50)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Age</td>
<td>36.81 (12.47)</td>
<td>−.10</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. IQ level</td>
<td>1.92 (0.58)</td>
<td>.10</td>
<td>−.08</td>
<td></td>
<td></td>
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<tr>
<td>4. Employment type</td>
<td>0.26 (0.44)</td>
<td>−.04</td>
<td>−.03</td>
<td>.12</td>
<td></td>
<td></td>
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<tr>
<td>5. Job demands</td>
<td>3.00 (0.69)</td>
<td>.04</td>
<td>−.29***</td>
<td>−.20*</td>
<td>−.09</td>
<td></td>
</tr>
<tr>
<td>A. Psychological demands</td>
<td>3.61 (0.82)</td>
<td>.11</td>
<td>−.19*</td>
<td>−.30**</td>
<td>−.02</td>
<td>.76***</td>
</tr>
<tr>
<td>B. Physical demands</td>
<td>2.37 (1.09)</td>
<td>−.00</td>
<td>−.21*</td>
<td>−.16</td>
<td>.02</td>
<td>.77***</td>
</tr>
<tr>
<td>C. Emotional demands</td>
<td>2.62 (1.06)</td>
<td>−.05</td>
<td>−.23*</td>
<td>.10</td>
<td>−.22*</td>
<td>.59***</td>
</tr>
<tr>
<td>6. Job resources</td>
<td>4.26 (0.43)</td>
<td>.10</td>
<td>−.04</td>
<td>−.06</td>
<td>−.04</td>
<td>0.3</td>
</tr>
<tr>
<td>A. Decision authority</td>
<td>3.65 (0.93)</td>
<td>.11</td>
<td>.04</td>
<td>−.01</td>
<td>−.10</td>
<td>−.06</td>
</tr>
<tr>
<td>B. Skill utilization</td>
<td>4.16 (1.03)</td>
<td>.05</td>
<td>−.30**</td>
<td>−.01</td>
<td>−.18</td>
<td>.33**</td>
</tr>
<tr>
<td>C. Meaningfulness</td>
<td>4.68 (0.50)</td>
<td>.00</td>
<td>.18</td>
<td>−.03</td>
<td>−.06</td>
<td>−.02</td>
</tr>
<tr>
<td>D. Social support co-worker</td>
<td>4.15 (0.71)</td>
<td>.05</td>
<td>−.06</td>
<td>−.14</td>
<td>.24**</td>
<td>−.00</td>
</tr>
<tr>
<td>E. Social support mentor</td>
<td>4.62 (0.45)</td>
<td>.06</td>
<td>.03</td>
<td>.08</td>
<td>−.18</td>
<td>−.11</td>
</tr>
<tr>
<td>7. Neuroticism</td>
<td>2.51 (0.96)</td>
<td>.16</td>
<td>−.09</td>
<td>−.10</td>
<td>.04</td>
<td>.10</td>
</tr>
<tr>
<td>8. Extraversion</td>
<td>3.63 (0.96)</td>
<td>−.02</td>
<td>.03</td>
<td>−.15</td>
<td>−.07</td>
<td>.11</td>
</tr>
<tr>
<td>9. Conscientiousness</td>
<td>3.69 (0.89)</td>
<td>−.05</td>
<td>−.03</td>
<td>.13</td>
<td>.13</td>
<td>−.01</td>
</tr>
<tr>
<td>10. Job satisfaction</td>
<td>4.33 (0.78)</td>
<td>.07</td>
<td>.26**</td>
<td>−.04</td>
<td>−.02</td>
<td>−.14</td>
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</tbody>
</table>

Note. N ranges from 111 to 117 due to missing data.

*p < 0.05. **p < 0.01. ***p < 0.001.

job demands and job satisfaction. The overall model, with the control variable (age), two predictors, and the interaction, was significant, $R^2 = .14$, $F(4, 105) = 4.25, p = .003$. In this model, job demands ($\beta = -.08, p = .382$) and conscientiousness ($\beta = .10, p = .262$) were not found to be significant predictors of job satisfaction, yet age ($\beta = .24, p = .014$) and the interaction between job demands and conscientiousness were significant ($\beta = -.25, p = .007$). Examination of the interaction plot (Figure 2) showed a negative association between job demands and job satisfaction for participants with high levels of conscientiousness, which was not found for participants with low levels of conscientiousness.

Second, we performed three analyses examining the moderating effects of neuroticism, extraversion, and conscientiousness on the relation between job resources and job satisfaction. It was found that the overall models including the interaction terms for job resources x neuroticism, $R^2 = .25$, $F(4, 105) = 8.52, p = .000$, for job resources x extraversion, $R^2 = .23$, $F(4, 105) = 7.69, p = .000$, and for job resources x conscientiousness, $R^2 = .24$, $F(4, 105) = 8.34, p = .000$ were significant, yet the interaction terms between job resources and neuroticism ($\beta = -.09, p = .325$), job resources and extraversion ($\beta = -.11, p = .234$), and job resources and conscientiousness ($\beta = -.15, p = .091$) were not significant predictors of job satisfaction. It was hence concluded that the relationship between job resources and job satisfaction was not significantly moderated by any of the personality traits.

**Discussion**

Using the JD-R model as a framework, the present study investigated the effects of job demands, job resources, and personality traits on the job satisfaction of people with ID. It was found that higher job resources and higher age were the most significant contributors to enhanced job satisfaction.

In line with previous research, the present findings emphasize the importance of the work context in order to enhance job satisfaction (e.g., Akkerman et al., 2014, 2016; Flores et al., 2011).
Table 1
Extended

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<th>5B</th>
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<td>.30**</td>
<td>.25**</td>
<td>-.15</td>
<td>-.09</td>
<td>-.02</td>
<td>-.15</td>
<td>.05</td>
<td>.63***</td>
<td>.31**</td>
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<td>-.12</td>
<td>.59***</td>
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<td>.16</td>
<td>.02</td>
<td>.19</td>
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<td>.00</td>
<td>-.03</td>
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Table 2
Hierarchical Regression Analysis With Job Satisfaction as a Dependent Variable

<table>
<thead>
<tr>
<th>Step</th>
<th>R²</th>
<th>R² change</th>
<th>F change</th>
<th>B (SE)</th>
<th>Beta</th>
<th>t</th>
</tr>
</thead>
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<td>.06</td>
<td>.06</td>
<td>6.98***</td>
<td>.02 (.01)</td>
<td>.25</td>
<td>2.64**</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.09</td>
<td>.03</td>
<td>1.09</td>
<td>.02 (.01)</td>
<td>.26</td>
<td>2.78**</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td>.11 (.08)</td>
<td>.14</td>
<td>1.46</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.02 (.08)</td>
<td>.02</td>
<td>.23</td>
<td>.07 (.08)</td>
<td>.08</td>
<td>.89</td>
</tr>
<tr>
<td>Extraversion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.25</td>
<td>.17</td>
<td>11.39***</td>
<td>.02 (.01)</td>
<td>.26</td>
<td>2.90**</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td>.13 (.07)</td>
<td>.16</td>
<td>1.88</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>-.02 (.07)</td>
<td>-.02</td>
<td>-.26</td>
<td>.06 (.07)</td>
<td>.07</td>
<td>.80</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Conscientiousness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job demands</td>
<td>-.11 (.10)</td>
<td>-.11</td>
<td>-1.18</td>
<td>.72 (.16)</td>
<td>.40</td>
<td>4.58***</td>
</tr>
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<td></td>
<td></td>
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</tbody>
</table>

Note. N = 110.
*p < 0.05. **p < 0.01. ***p < 0.001.
Job resources (i.e., decision authority, opportunities to utilize one’s skills, the experience of meaningfulness, and social support from co-workers and mentors) were found to be the most significant predictors of job satisfaction. No significant contribution of job demands on job satisfaction of people with ID was found. It has been suggested within JD-R literature, that well-being factors, such as job satisfaction, are most strongly associated with the availability of positive, resourceful work characteristics, whereas negative work characteristics show stronger associations with negative outcomes (e.g., burnout, exhaustion; Demerouti et al., 2001). This finding may help explain the lack of significant associations between job demands and job satisfaction in this study. Nevertheless, Flores et al. (2011) did find a negative association between job demands and job satisfaction of people with ID. The lack of association could also be due to the fact that an overall scale was used for job demands. It should be noted that we found significant correlations for one of the subscales for job demands (i.e., emotional demands) and job satisfaction, but not for the other two subscales (i.e., psychological and physical demands) and job satisfaction. These different relationships might have cancelled each other out. More research is needed to clarify the role of job demands in relation to job satisfaction of people with ID. This future project may benefit from recent research that has made a distinction between job demands that are perceived as challenges and job demands that are perceived as hindrances (Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010). Additional research is needed to explain the role of challenges and hindrances in the workplace for people with ID, and how this is associated with their job satisfaction.

Contrary to expectations, no direct effects were found for the personality traits neuroticism, extraversion, and conscientiousness on job satisfaction. The absence of a direct relation between personality traits and job satisfaction is not in line with mainstream empirical research, which shows that these traits typically do show associations with job satisfaction among employees without disabilities, although exceptions have been found before (Judge et al., 2002). It has been suggested that the strength of the association between personality traits and job satisfaction may be dependent upon the type of occupation. For instance, extraversion may be most related to satisfaction in social occupations, and conscientiousness in conventional and realistic jobs (Judge et al., 2002), which may be a partial explanation for the lack of association in this study. In addition, it should be noted that this study used an abbreviated personality measure. Although research indicates psychometric properties of the scale were acceptable, validity and reliability are lower in comparison with the full scales (Rammstedt & John, 2007). This may also be a potential reason for the lack of association that was found.

Although no direct effects were found for personality traits on job satisfaction, the present study did find a moderating effect for conscientiousness on the relation between job demands
and job satisfaction. The results indicated that for people with ID who have a tendency to act dutifully, and aim for achievement (i.e., high conscientiousness) enhanced job demands were associated with reduced job satisfaction. This was not the case for people with ID who have low levels of conscientiousness. No other moderating effects were found for personality traits on the relation between job characteristics and job satisfaction. Also, personality traits did not affect the perception of job demands and job resources. However, we did find significant associations between the personality traits neuroticism and extraversion and one of the subscales for job demands (i.e., psychological demands). As personality traits showed no significant associations with the other subscales for job demands, these associations might have cancelled each other out, resulting in a lack of association between personality traits and overall job demands. Overall, these results indicate that, although possibly not directly related, personality traits may nevertheless be relevant for job satisfaction of people with ID. More research is needed to clarify the complex interactions between personality traits and job characteristics in relation to their job satisfaction.

The present study also identified age as a significant predictor of job satisfaction. This is in line with other studies among nondisabled employees indicating a positive relationship between age and job satisfaction, although the association found in the current study appeared to be stronger (Ng & Feldman, 2010; Rhodes, 1983). As a possible explanation for the association between age and job satisfaction it has been suggested that older workers ultimately move into jobs that are a better fit with their personal characteristics and aspirations (Ng & Feldman, 2010; White & Spector, 1987). This may also be the case for employees with ID. In accordance with this, the present results indicate that older employees with ID experience fewer job demands than younger employees, which may indicate a better fit with their capacities. It should however be noted that this may also mean that older employees with ID experience fewer challenges, as some job demands may be challenging instead of a hindrance (Van den Broeck et al., 2010). Moreover, they were also found to experience fewer opportunities for skill utilization, indicating less use of varied competencies and fewer developmental opportunities. Additional research may increase insight in age-related work requirements and resulting support needs.

In this study no significant differences were found between integrated and sheltered employment regarding job satisfaction. These findings are inconsistent with prior studies on job satisfaction of people with ID, which point to higher job satisfaction levels in integrated employment. This may be explained by differences in personal characteristics of those employed in the different settings. It might also be explained by intercountry variation in context and conditions in sheltered and integrated employment. The employment situation of people with ID is known to show great variability among countries. Countries may, for instance, differ in terms of legislation, cultural values with respect to having a disability, and the social position of people with disabilities. Integrated and sheltered employment settings may vary with respect to payment, working conditions, advancement prospects, expected performance level, and support provided (Beyer, Jordán de Urries, & Verdugo, 2010; Visier, 1998). These cultural and contextual variations could lead to differences in (perception of) job characteristics of the employment settings and in individual job satisfaction. Moreover, in the current study all subjects were in unpaid jobs, and hence the effects of pay could not be taken in account. It should be advised that future research incorporates the effect of pay on job satisfaction.

Limitations

The participants in this study were served by a single care organization for people with ID in the Netherlands, and were all attending daycenters or in unpaid supported employment. Only people who had been declared unfit for gainful employment, and received government benefits instead of pay from work, were included. People with less severe work disabilities, people not receiving support, and/or who are being paid for their work, were not included due to the sampling method, which limits generalizability of the findings. Furthermore, in line with the current situation in the Netherlands, the majority of the participants worked in sheltered employment, and a smaller number in integrated employment, resulting in a skewed distribution. As employment situations of people with ID vary among countries, results have to be interpreted with caution, and may not be fully generalizable across countries. It would be useful for future research to
include people with ID with more work capacities and in other employment settings. The characteristics of the sample may have resulted in range restrictions regarding the study variables, hence affecting outcomes.

This study relied on self-report data for the job characteristics and job satisfaction. Although various measures have been taken to ensure comprehension, it is nevertheless conceivable that subjects did not fully understand questions or were unable to fully reflect on their situations. This may have affected reliability and validity of the instruments used. Moreover, as subjective measures were used for both job characteristics and job satisfaction, common method variance may have inflated the strength of the associations. Measures were taken to reduce potential problems of common method variance; for instance, participants were assured that there were no right or wrong answers, they were encouraged to answer as honestly as possible, and anonymity was guaranteed (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). It is nevertheless recommended that future research includes objective measures of job characteristics to strengthen the findings.

Personality traits were assessed using observer ratings (of their job coach/support staff at work), for reasons of complexity of the questions and reducing the amount of questions for the clients. Although most personality research relies on self-report, it has been noted in general personality research that observer ratings of personality traits have great value and predict behavior as well as, or better than self-reports (Connelly & Ones, 2010; Oh et al., 2011). For assessing personality traits in people with ID only a few instruments exist that are based on broad theories of personality, such as the five factor model. Good experiences with respect to the use of proxies in assessing personality of people with ID have been reported (Boyd, 2013; Overbeek et al., 2009). Additional research is needed to compare psychometric properties and prediction of behavior in observer ratings and self-reports of personality by people with ID. Finally, as this study is cross-sectional in nature, caution is needed with respect to conclusions on the directions of the relationships.

Implications

The findings of the present study suggest a number of points for intervention by which job satisfaction of people with ID may be improved. First, present findings emphasize the significance of job design. It cannot be stressed enough that paying attention to job resources, such as meaningfulness and social support from coworkers and mentors, is essential for well-being. Paying attention to a person’s limitations, and decreasing overwhelming job demands remains important as well, particularly considering the fact that job demands are an important predictor of negative job outcomes like exhaustion (Bakker & Demerouti, 2007). Nevertheless, a focus on enhancing positive job characteristics may be the most effective way for allowing people with ID to flourish at work and for increasing their job satisfaction. What’s more, it may be interesting to investigate to what extent people with ID can be empowered in their jobs and mobilize their own job resources.

Second, this study points out that, for adequately matching a person with a job, it may be relevant to take account of a person’s personality traits. These may influence how a person actually perceives job characteristics or what he can cope with, and hence what support is required.

Third, the findings of this study point out that age is related to job satisfaction. Younger and older employees with ID may each have specific work-related support needs. Results suggest that both finding a good job that fits the characteristics and aspirations of younger employees, as well as continuing to provide sufficient challenges and opportunities for development for older employees are important aspects in providing work-related support. Paying attention to ongoing job development and career planning thus remains a concern, in both integrated and sheltered employment. In addition, the current results with respect to the associations between age and job satisfaction raise new questions as to why these associations exist, whether the same job characteristics are relevant to older and younger employees, and what the role of work experience and duration of the job may be. Answers to these questions may provide more specific directions for improving support and this warrants attention in future research.

The current study found significant predictors of job satisfaction, explaining 25% of variance. This means a large part of the variance in job satisfaction remains unexplained. More research is needed to investigate which other factors affect the job satisfaction of people with ID. This may include
other job demands or job resources than those included in this study, as well as other personal characteristics that were found to affect job satisfaction in other studies, such as for instance positive and negative affectivity, core self-evaluations (represented by self-esteem, self-efficacy, locus of control and neuroticism; Griffin, Rosenberg, Cheyney, & Greenberg, 1996; Judge & Klinger, 2008), or, considering the significance of age in this study, the inclusion of variables like time in job or job experiences may be useful (see also Seltzer, 1984). Furthermore, it is recommended that future research pay attention to the relative contribution of specific job characteristics, as this might provide specific avenues for interventions. Although the sample used in this study was relatively large compared to several other studies on job satisfaction of people with ID, allowing us to investigate a multifactorial model, the use of a larger sample may be needed for the inclusion of additional variables and/or subscales in the analyses.

Moreover, other theoretical frameworks may provide additional insights into the antecedents of job satisfaction. For instance, self-determination theory (SDT; Deci & Ryan, 2000) may provide additional insight into motivational processes in relation to job satisfaction. Moreover, the satisfaction of basic psychological needs at work, as defined within SDT, may provide an explanation of the processes underlying the relation between job resources and job satisfaction (Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). Finally, research is needed to examine the effectiveness of support strategies in relation to job satisfaction.

References


A. Akkerman, S. Kef, and H. P. Meininger


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Authors:
Alma Akkerman, Cosis, Center of Expertise, the Netherlands; Sabina Kef and Herman P. Meininger, Vrije Universiteit Amsterdam, the Netherlands.

Correspondence concerning this article should be addressed to Dr. Alma Akkerman, Cosis Center of Expertise, Postbus 9473, Groningen, 9703 LR, the Netherlands (e-mail: a.akkerman@cosis.nu).